REMARKS

Reconsideration and withdrawal of the rejections of record are respectfully requested.

Summary of Status of Amendments and Office Action

Upon entry of the above amendment, claims 5, 6, and 9 to 12 will have been amended and claims 13 to 24 will have been added. Accordingly, claims 5 to 23 will remain pending in the application with claims 5, 13 and 19 being independent. Claims 1 to 4 have been withdrawn from further consideration as being drawn to a non-elected invention.

In the Office Action, restriction was required; claims 5 to 7 and 10 to 12 were rejected under 35 U.S.C. § 102(b); and claims 8 and 9 were rejected under 35 U.S.C. § 103(a).

The claims have been amended so as to expedite the prosecution of this application.

Amendments to the Claims and Newly Added Claims

Claims 5, 6, 11 and 12 have been amended to remove redundant language such as "the steps of", "step (a)", "step (b)", "step of" and "further step" from the claims.

In addition, claims 9 and 10 have been amended to recite alternative language as provided in MPEP § 2173.05(h).

Newly added claim 13 is similar to claim 4 except that claim 13 recites that the aqueous medium is selected from an ammonium nitrate solution or an ammonium carbonate solution.

Newly added claim 19 is similar to claim 4 except that claim 19 recites that the molecular sieve of the alkylation catalyst is PSH-3, SSZ-25, MCM-36, MCM-49, MCM-56, faujasite, mordenite or zeolite beta.

Applicants submit that the amendments to the claims and the newly added claims do not introduce new matter, but rather place the claims in condition for allowance.

Response to the Restriction Requirement

In the Office Action, the Examiner indicated that all claims (1-12) were subject to restriction under 35 U.S.C. § 121 and acknowledged Applicants' election with traverse of the invention defined by Group II (claims 5-12).

In the Office Action, the Examiner indicated that the inventions were patentably distinct and were restrictable between the invention of Group I, including claims 1-4, drawn to a process of regeneration of an alkylation/transalkylation catalyst, classified in class 502, subclass 30; and Group II, including claims 5 to 12, drawn to an alkylation process, classified in class 585, subclass 467.

The Examiner asserts that the inventions of Groups I and II are distinct from each other for the following reasons:

Inventions I and II are related as combination and subcombination. The Examiner contends that distinctness is proven if either or both of the following can be shown: (1) that the combination as claimed does not require the particulars of the subcombination as claimed for patentability and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In this case, the Examiner urges that the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require a transalkylation catalyst.

The Examiner considers that since the inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by the different classification, restriction for examination purposes as indicated is proper.

First, Applicants respectfully submit that the Examiner has not properly applied 35 U.S.C. § 121, which requires a showing that the inventions are both independent and distinct. Rather, the Examiner has applied a test to show that the inventions are distinct, but has not addressed whether the inventions are independent. This, however, is contrary to a clear reading of 35 U.S.C. § 121, which requires a showing that the inventions are independent and distinct. By requiring restriction without the application of the proper test, Applicants are deprived of their opportunity to properly respond to a well-reasoned restriction requirement. Further, Applicants are prejudiced because if the restriction requirement is maintained, Applicants will be forced to file a divisional application as to

the non-elected subject matter, i.e., a process of regeneration of an alkylation/transalkylation catalyst of Group I. In so filing a divisional application, Applicants will lose a part of the 20-year term of their patent protection, since the term of a patent granted on the divisional application is 20 years from the earliest effective filing date, i.e., the filing date of this application.

Second, Applicants respectfully submit that the Examiner has omitted one of the two criteria for a proper restriction requirement now established by the U.S. Patent and Trademark Office policy. That is, as set forth in MPEP § 803, "an appropriate explanation" must be advanced by the Examiner as to the existence of a "serious burden" if the restriction requirement were not required.

While the Examiner has alleged a possible distinction between the two identified groups of invention, the Examiner has not shown that a concurrent examination of these groups would present a "serious burden" on the Examiner. In fact, while the Examiner has noted that the individual groups would be classified in different classes, there is no appropriate statement that the search areas required to examine the invention of Group I would not overlap into the search areas for examining the invention of Group II, and vice versa. Applicants respectfully submit that the search for the combination of features recited in the claims of the above-noted groups, if not totally co-extensive, would appear to have a very substantial degree of overlap. Because the search for each group of invention is substantially the same, Applicants submit that no undue or serious burden would be presented in concurrently examining Groups I and II. Thus, for the above-noted reasons, and consistent with the office policy set forth above in MPEP § 803, Applicants respectfully request that the Examiner reconsider and withdraw the restriction requirement in this application.

For the foregoing reasons, the Examiner's restriction is believed to be improper. Accordingly, Applicants request that the Examiner withdraw the restriction requirement and conduct an examination on all the pending claims.

Response to the Rejection of Claims 5 to 7 and 10 to 12 Under 35 U.S.C. § 102(b)

In the Office Action, claims 5 to 7 and 10 to 12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Chu (U.S. Patent No. 4,886,616). The Examiner states that Chu, the abstract, col. 10, line 56 through col. 11, line 25, the examples, namely example 4, discloses a process of alkylation of an aromatic hydrocarbon, such as toluene, with an olefin, such as ethylene, in the presence of a molecular sieve catalyst, which, after a period of use, is regenerated with air and an aqueous medium containing acetic acid. The Examiner states that the timing, temperature, and calcination of step c can also be found in example 4 of Chu.

Applicants respectfully disagree with the Examiner's position.

Claim 5 recites a process for alkylating an aromatic compound comprising:

contacting an alkylatable aromatic compound and an alkylating agent with an alkylation catalyst comprising a molecular sieve under alkylation conditions;

when said alkylation catalyst has become at least partially deactivated, contacting said alkylation catalyst with an oxygen-containing gas at a temperature of about 120 to about 600° C; and

contacting the oxygen treated catalyst with **an aqueous medium**. [Emphasis added.]

The claimed process differs from Chu in several respects. First, in the claimed process, treatment with the aqueous medium occurs in the liquid phase, whereas in Chu treatment with the acetic acid occurs in the gaseous phase. Second, in the claimed process, after calcining the catalyst in an oxygen containing gas, the oxygen treated catalyst is then treated with an aqueous medium, whereas in Chu, after the catalyst is calcined, the catalyst is tested for disproportionation, then returned to room temperature and then the tested catalyst is rejuvenated with acetic acid in air.

Based on these differences, Applicants submit that Chu cannot anticipate the process defined by claims 5 to 7 and 10 to 12.

With respect to the newly added claims 13 to 18, Applicants submit that Chu does not teach a process for alkylating an aromatic compound wherein the aqueous medium is selected from ammonium nitrate solution, or ammonium carbonate solution.

With respect to the newly added claims 19 to 24, Applicants submit that Chu does not teach a process for alkylating an aromatic compound wherein the molecular sieve of the alkylation catalyst is selected from PSH-3, SSZ-25, MCM-36, MCM-49, MCM-56, faujasite, mordenite or zeolite beta.

For the foregoing reasons, Applicants request that the Examiner withdraw the rejection.

Response to the Rejection of Claim 8 Under 35 U.S.C. § 103(a)

In the Office Action, claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Chu (U.S. Patent No. 4,886,616). The Examiner states that Chu is silent about using benzene as an aromatic reactant, but the Examiner considers the use of benzene obvious since it would be expected that any aromatic can be alkylated in the presence of the Chu catalyst. Further, the Examiner contends that toluene is a homologue of benzene and since toluene can be alkylated in the Chu process, one would expect that benzene, a closely related homologue, can also be alkylated.

Applicants respectfully disagree with the Examiner's conclusion. As noted above, the Chu patent does not anticipate the invention recited in claims 5 to 7 and 10 to 12. Since claim 8 depends from claim 5, the Examiner has not shown that the claimed process would have been obvious. Nowhere does Chu show or suggest the particular recitations in claim 5.

For the foregoing reasons, Applicants request that the Examiner withdraw this rejection.

Response to the Rejection of Claim 9 Under 35 U.S.C. § 103(a)

In the Office Action, claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Chu (U.S. Patent No. 4,886,616) alone or alternatively in view of Huss (U.S. Patent No. 5,030,785). The Examiner acknowledges that Chu does not disclose that the sieve is MCM-22. The Examiner directs attention to Chu, the abstract, which states that the zeolite has a constraint index of 1 to 12. The Examiner relies upon Huss,

table, at column 5, llines 13 and 14 which show that MCM-22 has a constraint index of 1.5.

Applicants respectfully submit that the Examiner's position is not well taken. In this regard, the Examiner has relied upon a selected portion of the abstract which speaks of a constraint index. The abstract also states that the zeolite which can be treated in accordance with the Chu invention must have a silica to alumina ratio of at least 12 and have a minor proportion of the oxide form of one or more chemical elements (e.g. phosphorous and magnesium) deposited thereon. The Examiner, however, has not shown that MCM-22 has the other properties so that it can be used in the Chu invention. In this regard, the Examiner's attention is directed to Chu, column 5, lines 42 to 45, which discloses the zeolites useful in the Chu invention and to Chu, column 6, lines 19 to 42, which list zeolites which are not useful in his invention and zeolites which are useful in his invention.

Applicants submit that since Chu does not disclose or suggest the process recited in claim 5, Chu cannot suggest or disclose the process of dependent claim 9.

For the foregoing reasons, Applicants request that the Examiner withdraw this rejection.

CONCLUSION

For the reasons advanced above, Applicants respectfully submit that all pending claims patentably define Applicants' invention. Allowance of the application with an early mailing date of the Notice of Allowance and allowability is therefore respectfully requested.

AMENDMENT UNDER 37 CFR § 1.111
Application No. 09/903,476

Should the Examiner have any further comments or questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

1 NOVEMBER 2002

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APPENDIX

Marked up copy of claim 5

5. (Amended) A process for alkylating an aromatic compound comprising: [the steps of:

(a)] contacting an alkylatable aromatic compound and an alkylating agent with an alkylation catalyst comprising a molecular sieve under alkylation conditions; and

[(b)] when said alkylation catalyst has become at least partially deactivated, contacting said alkylation catalyst with an oxygen-containing gas at a temperature of about 120 to about 600° C; and then

[(c)]contacting the oxygen treated catalyst [from step (b)] with an aqueous medium.

Marked up copy of claim 6

6. (Amended) The process of claim 5 wherein [the] contacting [step (a)] the oxygen treated catalyst with the aqueous medium is conducted in the liquid phase.

Marked up copy of claim 9

9. (Amended) The process of claim 5 wherein the molecular sieve of the alkylation catalyst [of step (a)] is [selected from] MCM-22, PSH-3, SSZ-25, MCM-36, MCM-49, MCM-56, faujasite, mordenite [and] or zeolite beta.

Marked up copy of claim 10

10. (Amended) The process of claim 5 wherein said aqueous medium is [selected from the group consisting of an] ammonium nitrate solution, [an] ammonium carbonate solution [and] or [an] acetic acid solution.

Marked up copy of claim 11

11. (Amended) The process of claim 5 wherein [the step of] contacting the catalyst with [an] the aqueous medium is conducted at a temperature of about 15 to about 120° C for a period of about 10 minutes to about 48 hours.

Marked up copy of claim 12

12. (Amended) The process of claim 5 further including [the further step after step (c), of] calcining the aqueous medium contacted catalyst at a temperature of about 25 to about 600° C for a period of about 10 minutes to about 48 hours.